



# Technical Assistance Services for Communities

## DePue OU3 SLHHRE Document Review Report

**Contract No.:** EP-W-13-015  
**Task Order No.:** 10 OSRTI – Multi Regions  
**Technical Directive No.:** R5 #1.1 DePue

**Site Name:** DePue/New Jersey Zinc/Mobil Chemical Corp.  
**Site Location:** DePue, Illinois

### Purpose

In October 2015, the DePue Community Advisory Group (CAG) requested a review of the DePue/New Jersey Zinc/Mobil Chemical Corp. Superfund site October 2015 Screening Level Human Health Risk Evaluation (SLHHRE) for Operable Unit 3 by the U.S. Environmental Protection Agency's (EPA's) Technical Assistance Services for Communities (TASC) program. Independent technical and environmental consultants implement the TASC program. This report's contents do not necessarily reflect EPA's policies, actions or positions. TASC has provided the report to the DePue CAG.

### Community Concerns Identified by the DePue CAG

Community members requested a general review of the evaluation report and the identification of any report-related concerns. The following comments are intended for the CAG's consideration.

### Site Background

The DePue/New Jersey Zinc/Mobil Chemical Corp. Superfund site (the Site) is located along the north side of the Village of DePue. It includes about half of the village's land area. To manage site investigations and cleanup, EPA divided the Site into five operable units (OUs):

- OU1: south ditch contaminated sediments
- OU2: phosphogypsum stack
- OU3: former plant site area (FPSA)
- OU4: off-site soils
- OU5: DePue Lake sediments and floodplain

### Specific Comments

#### 1. Introduction, page 1:

- a. The second paragraph presents information that conflicts with the purpose of conducting a SLHHRE for OU3, to determine if areas require remediation based on human health

risks. The paragraph states that the SLHHRE was completed for the entirety of OU3 even though four areas within OU3 have been already identified as requiring remediation (the slag pile area, the lithopone ridges area, the north ditch and the settling ponds). The paragraph then states that the slag pile area and lithopone ridges area are included in the SLHHRE while the north ditch and the settling ponds are not part of the report.

TASC suggests clarifying the SLHHRE to explain how it was pre-determined that the slag pile area, lithopone ridges area, north ditch and settling ponds require remediation, since the purpose of the SLHHRE is to reach a remedial decision for all of OU3. Further, TASC suggests that the SLHRRE explain why the slag pile area and lithopone ridges area were included in the SLHHRE and the north ditch and the settling ponds were not addressed in the report. All four areas were already pre-determined to require remediation.

**2. Section 3.0, Selection of Human Health Chemicals of Potential Concern in Soil (HHCOPCs), page 4:**

- a. Footnote 3 on page 4 states that “background concentrations of the chemicals are not considered when selecting the HHCOPC ... but discussions of the background concentration levels and relationship to the calculated risks and hazards are presented, where applicable, within the screening risk assessment as per Illinois EPA direction.” This statement is not accurate. The SLHHRE eliminated potassium-40 as an HHCOPC based on comparing site concentrations to literature-based background ranges for rock, soil and continental crust (page 5) such that discussions of the background concentration levels and relationship to the calculated risk and hazards could not be conducted as requested by Illinois EPA in footnote 3. Potassium-40 should be retained as an HHCOPC; it exceeds the risk-based screening level for soil and should be evaluated in the SLHHRE.
  - b. The use of textbook background values is not consistent with EPA background evaluation approaches unless it can be demonstrated that site lithology reflects the same lithology as the reference area from which the literature values were derived. When evaluating the risk and hazard contribution from background conditions, site-specific background values should be collected.
  - c. The summary of potassium-40 data in the fourth paragraph on page 5 is not consistent with the information presented in Attachment A-2. The text on page 5 states that five soil samples detected potassium 40 at concentrations greater than the preliminary remedial goal (PRG) of 0.291 picocuries per gram (pCi/g), with concentrations ranging from 11 pCi/g to 19 pCi/g and one non-detect at 1.1 pCi/g. However, according to Table A-2, the PRG is 0.219 pCi/g with a 100 percent detection frequency ranging from 11 pCi/g to 19 pCi/g and no samples below detection.
- 3. Figure 3-1, Soil Sample Locations:** Two sampling locations (SB-04 and E-06) are highlighted in orange on this figure. However, the basis for highlighting the two samples is not provided. TASC suggests clarifying the significance of the highlighted sample locations in the legend for this figure.

4. **Section 8.1, Summary Statistics for Future Industrial Worker, page 16:** This section includes a comparison of statistics for a future industrial worker exposure scenario to the OU4 residential PRG of 21 milligrams per kilogram (mg/kg), which is significantly higher than both the industrial-based screening value of 3 mg/kg and the site-specific background level of 11.6 mg/kg. It is unclear why the less stringent OU4 residential PRG is included in the screening of the OU3 industrial worker scenario. TASC believes it is more appropriate to discuss the OU3 future industrial worker statistics by comparing site concentrations to industrial-based screening values or site-specific background concentrations rather than residential values of unspecified origin. Further, TASC believes the residential PRG of 21 mg/kg, which is based on aggregate exposures that may occur in OU4 and OU5, may be overestimated; it does not account for residents who may not use the lake for recreational purposes. TASC suggests removing the comparison to the aggregate residential PRG from the SLHHRE. This value does not appear to be consistent with an industrial exposure and may be overestimated.
5. **Section 10.4, Background Concentrations and Residential PRG, page 26:** This section could be more clear; comparisons are made to OU3 data in text and figures with an OU4 residential PRG based on assumptions of unspecified origin. Use of the OU4 PRG does not seem to be helpful in the support of a remedial decision for OU3. In addition, there is a statement that background levels were not considered in the SLHHRE. A contaminant was removed from the SLHRRE due to background comparisons.
  - a. The first paragraph states that background concentrations were not considered within the SLHHRE. This statement differs from information presented in Section 3, which used background levels to eliminate potassium-40 as an HHCOPC.
  - b. Further, the first paragraph discusses the use of the OU4 residential arsenic PRG of 21 mg/kg for comparison purposes in OU3 industrial areas. It states that this PRG is not directly applicable to the industrial area and is more conservative than the industrial comparison value that should be used for the area. However, the industrial value used throughout the SLHHRE for arsenic is 3 mg/kg, which is more conservative (more stringent) than the residential OU4 arsenic PRG of 21 mg/kg. TASC believes that the OU4 residential arsenic PRG of 21 mg/kg may be overstated, based on a review of the assumptions used to derive this value. TASC suggests removing the use of this value in the SLHHRE for OU3.
  - c. The last sentence of the second paragraph indicates that the final PRG for the industrial area is expected to be larger than the PRG for the OU3 residential area. However, this statement is not supported – residential exposure was not evaluated for OU3 and an OU3 residential PRG was not presented – especially given that the OU4 residential PRG was much higher than the industrial screening level.

TASC suggests clarifying Section 10.4 to address these discrepancies. This will help ensure a transparent understanding of how background concentrations and residential PRGs would impact the interpretation of data for industrial exposures at OU4.



## **Skeo Solutions Contact Information**

Technical Advisor

Ryan Burdge

434-975-6700 ext. 228

[rburdge@skeo.com](mailto:rburdge@skeo.com)

Project Manager

Tiffany Reed

434-975-6700 ext. 277

[treed@skeo.com](mailto:treed@skeo.com)

Task Order Manager

Emily Chi

434-975-6700 ext. 238

[echi@skeo.com](mailto:echi@skeo.com)

Deputy Program Manager

Krissy Russell-Hedstrom

434-975-6700 ext. 279

[krissy@skeo.com](mailto:krissy@skeo.com)

Director of Finance and Human Resources

Briana Branham

434-975-6700 ext. 232

[bbranham@skeo.com](mailto:bbranham@skeo.com)

TASC Quality Control Monitor

Eric Marsh

434-975-6700 ext. 276

[emarsh@skeo.com](mailto:emarsh@skeo.com)